

**WHAT IS CLAIMED IS:**

- 1        1. A rapid feed paintball loader for use on a paintball gun, the
- 2        paintball loader comprising:
- 3              a container for holding a plurality of paintballs;
- 4              a drive cone rotatably mounted on a bottom portion of the container,
- 5              said drive cone having a top surface that slopes downward from a center
- 6              axis of said drive cone;
- 7              an exit tube exiting from the bottom portion of the container and
- 8              leading to an inlet tube of the paintball gun, said exit tube having a sloped
- 9              exit portion;
- 10             a plurality of fins affixed to the top surface of the drive cone, each
- 11            fin having a top surface and forming a gap with an adjacent fin large
- 12            enough to accommodate a paintball;
- 13             a catch arm mounted on an interior surface of the container adjacent
- 14            to the sloped exit portion of the exit tube, said catch arm being mounted at
- 15            a height which is above the top surface of the fins and which is
- 16            approximately equal to the radius of a paintball;
- 17             a motor that rotates the drive cone; and
- 18             means for actuating the motor upon demand.

PATENT APPLICATION  
DOCKET NO. 1280-0001

1           2. The rapid feed paintball loader of claim 1, wherein the motor  
2         is an electric motor powered by a power supply.

1           3. The rapid feed paintball loader of claim 2, wherein the power  
2         supply is a battery.

1           4. The rapid feed paintball loader of claim 1, the means for  
2         actuating the motor upon demand includes a detector for detecting a  
3         presence of paintballs at a selected position within the exit tube.

1           5. The rapid feed paintball loader of claim 4, wherein said  
2         detector is an electro-mechanical switch located within the exit tube.

1           6. The rapid feed paintball loader of claim 5, wherein the  
2         electro-mechanical switch includes an actuating arm located in the exit  
3         tube and a contact switch connected to the motor, whereby each paintball  
4         entering the exit tube actuates the actuating arm which forces the contact  
5         switch to disengage the motor.

1           7. The rapid feed paintball loader of claim 4, wherein said  
2         detector is an infrared sensor.

1        8. The rapid feed paintball loader of claim 4, wherein said  
2        detector is an optical sensor.

1        9        The rapid feed paintball loader of claim 4, further comprising  
2        a microprocessor communicating with the detector and the motor.

1        ~~10~~      <sup>15</sup> The rapid feed paintball loader of claim 4, wherein said means  
2        for actuating the motor upon demand includes a microprocessor which  
3        disengages the motor when receiving a signal from the detector that the  
4        presence of paintballs is detected in the exit tube.

1        ~~11~~      <sup>16</sup> The rapid feed paintball loader of claim ~~10~~ <sup>15</sup> wherein said  
2        microprocessor momentarily reverses a rotational direction of the motor  
3        when said microprocessor detects a specified increase in torque output  
4        from the motor.

1        ~~12~~      <sup>10</sup> The rapid feed paintball loader of claim 9, further comprising  
2        a display positioned on the container and wherein said microprocessor  
3        displays relevant data to an operator of the paintball gun on the display.

1        ~~14~~      <sup>13</sup> The rapid feed paintball loader of claim 13 wherein said timer  
2        emits an audio warning after a preselected time has elapsed.

1           ~~14~~ 15. The rapid feed paintball loader of claim 13 wherein said timer  
2        displays a visual warning after a preselected time has elapsed.

1           ~~15~~ 16. The rapid feed paintball loader of claim 13 wherein said time  
2        provides a vibratory alert after a preselected time has elapsed.

1           ~~17~~ 18. The rapid feed paintball loader of claim 1 wherein each fin  
2        has a height less than the radius of a paintball.

1           ~~18~~ 19. The rapid feed paintball loader of claim 1 wherein the sloped  
2        exit portion has a slope approximately equivalent to the slope of the top  
3        surface of the drive cone.

1           ~~19~~ 20. The rapid feed paintball loader of claim 1 wherein the fins are  
2        vertical.

1           ~~20~~ 21. The rapid feed paintball loader of claim 1 wherein the  
2        plurality of fins spiral outwardly from the center axis of the drive cone and  
3        rearwardly from the direction of rotation of the drive cone.

JS

1 *Paint* 2.0  
2 1. A rapid feed paintball loader for use on a paintball gun, the  
3 paintball loader comprising:  
4       a container for holding a plurality of paintballs;  
5       a drive cone rotatably mounted on a bottom portion of the container;  
6       an exit tube exiting from a bottom portion of the container and  
7       leading to an inlet tube of the paintball gun;  
8       a plurality of fins affixed to the top surface of the drive cone, said  
9       plurality of fins spiraling outwardly from the center axis of the drive cone,  
10      each fin having a top surface and forming a gap with an adjacent fin large  
11      enough to accommodate a paintball;  
12      a catch arm mounted on an interior surface of the container adjacent  
13      to the exit tube, said catch arm being mounted at a height which is above  
14      the top surface of the fins and which is approximately equal to the radius  
15      of a paintball;  
16      motor that rotates the drive cone; and means for actuating the motor  
         upon demand.

1 *1st A4* 21 -22. A rapid feed paintball loader for use on a paintball gun, the  
2 paintball loader comprising:  
3 a container for holding a plurality of paintballs;  
4 a plurality of fins located at a bottom portion of the container, each  
5 fin having a top surface and forming a gap with an adjacent fin large  
6 enough to accommodate a paintball;  
7 means for rotating the plurality of fins about an axis running  
8 perpendicularly through the bottom portion of the container;  
9 an exit tube exiting from the bottom portion of the container and  
10 leading to an inlet tube of the paintball gun, said exit tube having a sloped  
11 exit portion;  
12 a catch arm mounted on an interior surface of the container adjacent  
13 to the sloped exit portion of the exit tube, said catch arm being mounted at  
14 a height which is above the top surface of the fins and which is  
15 approximately equal to the radius of a paintball;  
16 a motor that rotates the drive cone; and  
17 means for actuating the motor upon demand.

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